

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET
SACRAMENTO, CA 95814-5512



January 21, 2000

Mr. Les Toth
5546 Old Salt Ln
Agoura Hills, CA 91301

Dear Mr. Toth:

THREE MOUNTAIN POWER PROJECT DATA REQUESTS NUMBERS 97 THROUGH 114

Pursuant to Title 20, California Code of Regulations, section 1716, the California Energy Commission (Energy Commission) staff requests that the Three Mountain Power Project, Limited Liability Company supply the information specified in the enclosed data requests (Data Requests 97 through 114. These data requests address water resources.

Written responses to the enclosed data requests are due to the Energy Commission by February 21, 2000 or at such later date as may be agreed upon by the Energy Commission staff and the applicant. Upon request, staff will be available to answer questions regarding the data requests and the level of detail required to answer the requests satisfactorily.

If you are unable to provide the information requested in the data requests or object to providing it, you must, within 15 days of receiving these requests, send a written notice of your inability or objection(s) to both Chairman William J. Keese, Presiding Member of the Committee for this proceeding, and me. The notification must also contain the reasons for not providing the information and the grounds for any objections (see Title 20, California Code of Regulations section 1716 (e)).

If you have any questions regarding the enclosed data requests, please call me at (916) 653-1614.

Sincerely,

Richard Buell
Siting Project Manager

Enclosure

cc: Proof of Service 99-AFC-2

RKB:rkb
Datareq7.doc

CALIFORNIA ENERGY COMMISSION

1516 NINTH STREET

SACRAMENTO, CA 95811-1517

**Technical Area:** Soil and Water Resources**Author:** Richard Sapudar and Linda Bond**BACKGROUND**

The Energy Commission needs to know where the project will obtain its water. The Will Serve letter provided by the Burney Water to supply the Three Mountain Power Project (TMPP) with water contained several conditions under which water would be supplied. The applicant has not yet either agreed to these conditions, or negotiated a contract with BWD to supply the project with water. In the applicant's "Comments of Three Mountain Power on the Preliminary Staff Assessment" (January 7, 2000), an alternate source of water is discussed. Should the applicant not reach agreement with the Burney Water District, the applicant would construct it's own wells at the same location as identified in the BWD option.

DATA REQUEST

97. Please provide one of the following:

- a. A letter of intent to enter into an agreement/contract with BWD.
- b. A letter indicating that a draft agreement/contract between the applicant and BWD has been prepared and is undergoing review and consideration.
- c. A copy of a final agreement/contract signed by both parties.

98. If BWD will not supply the project with water, please provide either of the following:

- a. A letter of intent to enter into an agreement/contract with the landowner(s).
- b. A letter indicating that a draft agreement/contract between the applicant and the landowner(s) has been prepared and is undergoing review and consideration.
- c. A copy of a final agreement/contract signed by both parties.

BACKGROUND

At the August 16, 1999 Informational Hearing and Site Visit held in Burney, Mr. McFadden stated that water use at the project will increase to 3,500 acre-feet/year and the wastewater discharge increase to 800 acre-feet/year. These increases were discussed as "...based on refinements of the study and a little bit of a refinement of the plant design." This represents an increase of water use of approximately 20 percent, and an increase in wastewater discharge of over 70 percent from the original estimates contained in the AFC.

The AFC refers to 10 cycles of concentration in the cooling towers several times. However, the data supplied by TMPP and docketed on December 22, 1999 (White & Case/Cottle, 1999, December 22, 1999 letter to James Rorhbach, California Regional Water Quality Control Board (RWQCB), from Andrew F. Washington on behalf of the Three Mountain Power Project) refers to 5 cycles of concentration in the cooling towers. This additional water is clearly not needed and is not being used for consumptive cooling or other uses by the

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project. It is not being recovered, conserved, or recycled within the plant; it is apparently being passed through the plant while at the same time undergoing a degradation in water quality.

DATA REQUEST

99. Please explain in detail why the number of cycles of concentration of water through the cooling towers changed from 10 cycles to 5 cycles. Did this change cause the increases seen in water use/wastewater discharge from 2,900 acre-feet/440 acre-feet to 3,500/760 acre-feet/year?
100. Please explain in detail why the wastewater discharge increased over 70 percent from 440 acre-feet/year to 760 acre-feet/year.
101. Provide a detailed discussion of how water used by the project can be conserved and/or recycled. Identify and discuss all available and applicable technology and processes by which water conservation can be maximized by the project and at which point(s) in the project design they can be applied. Provide charts and/or tables for the total water use and for each individual process water and wastewater stream which quantitatively compares water use, the volume of wastewater discharged, and the wastewater constituent concentrations under the currently proposed project and under a project designed to conserve, recover, or recycle water.

BACKGROUND

The Central Valley Regional Water Quality Control Board (CVRWQCB) stated that they would require TMPP's waste discharge "...to result in no measurable degradation of water quality beyond the property boundaries.", and that they "... would require extensive ground water monitoring up- and down-gradient of the site." to insure this outcome. The CVRWQCB letter goes on to request that TMP provide "... a detailed analysis of all alternatives that could substantially decrease groundwater usage and/or discharges of TDS to groundwater, including air cooling and evaporation."

These concerns were raised in staff data requests to the applicant on September 15, 1999. For example, Energy Commission staff submitted data request #62:

62. "Please provide a detailed discussion of potential alternative wastewater disposal methods, including zero discharge and lined ponds. The discussion should identify environmental impacts and benefits as well as provide estimated costs to the proposed project."

Neither the partial response to this data request submitted by the applicant on October 15, 1999 (White & Case/Cottle, Responses of Three Mountain Power, LLC to Staff Data Requests 51-70, October 14, 1999), nor the follow-up response submitted on November 16, 1999 (White & Case/Cottle, Responses of Three Mountain Power, LLC to Staff Data Requests 62, 66 and 67, November 15, 1999) discussed the use of lined ponds under

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reduced or concentrated waste discharge conditions achieved using available alternative wastewater treatment or disposal methods.

The only discussion provided of lined ponds uses the estimates for the currently proposed project wastewater discharge of 760 acre-feet/year, which is inadequate since this does not address other measures that could be used to reduce the amount of wastewater to be discharged. Without this discussion, the conclusion drawn are potentially faulty.

Staff has received the latest groundwater quality data which was produced using a more sensitive analytical method than used previously. For the purpose of responding to the data requests below, it may be anticipated that such background levels will generally be in the range of the concentrations determined in the latest analytical results for the Burney Water District Well #7, the Johnson Park Well #1, and the Burney Mountain Power Well, which were received by email on January 10, 2000, and mailed by the applicant on January 7, 2000.

Determination of the actual ambient background or baseline groundwater constituent concentrations which the project will be required to meet is subject to discussions with the CVRWQCB, and as previously discussed, will likely require additional groundwater monitoring to establish. Other methods, such as the use of a mass discharge-based approach to establishing baseline concentrations may also be applicable.

It is reasonable to expect best practicable treatment and control be applied to the TMPP wastewater discharge in accordance with SWRCB Resolutions 68-16 and 75-58, and The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Board, Central Valley Region.

DATA REQUEST

102. Please provide a schedule which leads to the production of Draft Waste Discharge Requirements at least 30 days prior to date scheduled for production of the FSA.
103. Please provide a project design which will comply with the intent of the CVRWQCB letter of January 4, 2000, which provides a basis for the expected Waste Discharge Requirements for the project, and which will allow no degradation of groundwater quality greater than background. This project configuration should include any available best practicable treatment or control options necessary to meet such requirements. These options are to include those that are currently available and either in use by existing power plants, or intended for use by currently proposed power plants.

BACKGROUND

As discussed in the AFC (Section 8.1.1.6, Figure 8.1-1), and in the Three Mountain Power Project Draft Erosion Control and Stormwater Management Plan (Bibb and Associates, October 13, 1999), and summarized in the PSA, stormwater is currently managed on the site by directing it overland to an unlined detention pond at the northwest corner of the property boundary. As stated in both the AFC and in the Draft Erosion Control and Stormwater

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Management Plan, the same overland flow and detention in the pond is proposed for use by the TMP:.

“Storm water is routed away from proposed improvements such as buildings or equipment. Water is collected in shallow swales or drainage ditches and channeled from the south and east around the Site to the depression at the northwest corner of the Site.”

Although the AFC states that a new stormwater detention basin will be constructed on the TMP site to retain runoff (AFC Section 6.14.3), the draft stormwater and erosion control plan (Bibb and Associates, October 13, 1999) refers to a depression at the northwest corner of the site which will be used to hold stormwater runoff.

As currently configured, the site is partially occupied by a 10 MW biomass combustion facility operated by Burney Mountain Power. Raw wood products are stored in one area, with the combustion residue, or ash, stored in another nearby area. The ash pile appears to be in direct contact with the soil surface, does not appear to be contained within berms, and is downgradient from the proposed TMPP facilities.

This area is adjacent to the area where the applicant proposes to construct the percolation ponds to which the projects' wastewater stream would be directed. These adjacent areas likely have very similar soils and subsurface geology. As demonstrated by the Report of Waste Discharge prepared for the TMPP, these soils and subsurface geology are permeable to the extent of apparently being suitable for percolation ponds.

Metals, trace elements, and other components of the ash, which includes TDS, would be expected to be present in stormwater. It is visually evident that ash residue is being carried to the stormwater detention pit, which is a potential if not actual source of groundwater contamination.

The TMPP is estimated to increase impervious surfaces at the site by 46 percent, producing an increase in stormwater runoff of 0.98 cubic feet per second (cfs). Such an increase in flow will result in a significant increase in the flow of stormwater to the detention pond, and may also lead to an increase in the surface water runoff from the TMPP facilities in the direction of the ash pile. Should this occur, a substantial increase in ash residue in the detention pond can be expected.

Higher levels of water resulting from the TMPP facilities in this unlined detention pond will cause an increase in the elevation-related pressure head of the water standing in this pond, since pressure in a static fluid system varies with changes in the elevation of the fluid. This higher pressure would be available to increase the rate of percolation of the water from the detention pond to groundwater. This expected greater rate of percolation, along with the increase in stormwater volume available for percolation, and when combined with the expected increase in the amount of ash residue and ash-related constituents carried to the detention pond, would be expected to result in an impact to groundwater quality downgradient of the detention pond.

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Neither the AFC nor the draft stormwater and erosion control plan show or discuss separate detention basins for the TMP project and the Burney Mountain Power facility. There is also no indication that stormwater flows from the TMP project and the Burney Mountain Power facility will be isolated from each other.

DATA REQUEST

104. To estimate the potential for impacts from combining the stormwater flows from the existing facility and the proposed TMP project, please provide analytical results for a water sample collected from the existing stormwater detention pond for the following constituents:

Calcium	Sodium	Arsenic	Specific conductance
Potassium	Sulfate	Cadmium	Molybdenum
Magnesium	Nitrate(N)	Chromium	Nickel
Selenium	TDS	Copper	Mercury
Lead	Zinc	pH	Alkalinity
Manganese	Chloride	Aluminum	Iron
Phosphorus	Nitrate	Carbonate	Bicarbonate

Detection limits for metals and trace elements should be comparable to those obtainable using U.S. EPA Method 200.8 (Inductively Coupled Plasma - Mass Spectroscopy).

105. Please provide a detailed description and design for a stormwater and erosion control plan which isolates the TMPP project stormwater flow/runoff collection, detention, treatment and/or discharge system facilities from the Burney Mountain Power stormwater collection, detention, and discharge system.
106. For the linear facilities, the applicant provided the Three Mountain Power Project Draft Erosion Control and Stormwater Management Plan for Linear Facilities (Bibb and Associates, Inc., January 6, 2000) document. Information was not provided on the pull site/laydown areas for the reconductoring of existing transmission lines associated with the TMP project. Please locate and describe how erosion and stormwater will be managed, and how revegetation will be accomplished in the reconductoring pull site/laydown areas.

BACKGROUND

To calculate the potential for well interference cause by the proposed project supply wells to existing wells, the location of nearby wells must be known. To consider the applicant's request to perform pumping tests after certification, it is particularly important to identify the specific location of existing wells in the vicinity of the proposed well site.

Existing wells have been generally located by the applicant. Information submitted by the applicant indicates that there are from 5 to 11 wells that may be within one mile of the supply wells. The AFC stated that there are a total of 6 wells of record in the vicinity of the proposed project wells (Lawrence p.18, 1999), and the applicant response to staff data request #60 states that logs provide general information on locations for these 6 wells. In addition,

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Lawrence's presentation of Figure CE-58 at the November 3, 1999 Staff Workshop, indicates that there are 11 existing wells within Sections 9, 16 and 21 (T35N R3E), which could be within one mile of the proposed project wells. However, Figure 15 in the Report of Waste Discharge (Lawrence, 1999) provides only the general location the five wells in Section 16 and the specific location of two of the wells in Section 9. All eleven wells should be field located and considered in selecting the specific location of the supply wells and the pumping test observation wells.

DATA REQUEST

107. Please provide state well numbers, permit number and field locations for the 11 wells within Sections 9, 16 and 21 (T35N R3E) and any other wells within 1 mile of the proposed project well site.

BACKGROUND

The potential of well interference caused by the drawdown of the proposed project supply wells should be evaluated. A description of the calculation of drawdown of the proposed project wells has been provided by TMPP in response to CURE's data request #43(d).

In addition, the applicant plans to submit a well interference analysis using "worst-case" conditions (the applicant's response to PSA data requests). However, additional information is needed on the parameters and approach used to calculate drawdown.

The basis of selection of aquifer parameter values used in the drawdown analysis is needed to evaluate the likelihood of potential calculated impacts. If the basis of the selection of parameter values within a wide range of possible values cannot be substantiated, the results of any analysis must be considered speculative.

DATA REQUEST

108. Please provide the technical basis for the selection of aquifer parameter values for the calculation of drawdown, specifically hydraulic conductivity and aquifer thickness. Also, the analytic solution (Todd, 1959) used for the calculation of drawdown (response to CURE data request #43(d)) does not consider the storage capability of the aquifer (specific yield) and assumes a constant rate of recharge. Please explain the simplifying assumptions for the analytical solution(s), specifically the exclusion of the aquifer storage factor and the use of a constant recharge rate, with respect to conditions in Burney basin.

BACKGROUND

The basis of information on the lithologic and hydrologic conditions in the Burney area is needed to evaluate the likelihood of potential calculated impacts of the project on groundwater. The AFC has provided a geologic map of the Burney groundwater basin (Lawrence, 1999). The applicant also presented geologic cross sections (Figures CURE 45a and 46b) at the November 3, 1999, Staff Workshop (Lawrence, 1999).

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DATA REQUEST

109. Please describe the technical basis or provide references for the geologic maps and cross sections provided in the AFC and the November 3, 1999, Workshop.

BACKGROUND

The basis of information on well construction and groundwater levels in the Burney area is needed to evaluate the likelihood of potential calculated impacts of the project on groundwater. The AFC has provided a listing of well data for the Burney area in Appendix A of the Lawrence report (1999).

DATA REQUEST

110. Please provide state well number and references for the data provided in Appendix A of the Lawrence report (1999) included in the AFC.

BACKGROUND

The basis of selection of aquifer parameter values used in the groundwater model in the Burney area is needed to evaluate the likelihood of potential calculated impacts of the project on groundwater quality as described in the AFC. If the basis of the selection of parameter values within a wide range of possible values cannot be substantiated, the results of any analysis, including the groundwater model, must be considered speculative. To attempt to address this issue, the applicant plans to perform groundwater transport model analysis using "worst-case" conditions (the applicant's response to PSA data requests).

DATA REQUEST

111. Please provide a description of the basis of selection of aquifer parameter values used in the "worst-case" groundwater model analysis. Also provide any additional description of the basis of selection of aquifer parameter values used in the model analysis in the AFC (Lawrence, 1999), if available.

BACKGROUND

To evaluate pond design and the potential for increased flooding west of TMPP proposed water disposal ponds, the applicant compared soil conditions at the project site to the conditions at the Burney Water District's wastewater treatment ponds (WWTP) in the Report of Waste Discharge (Lawrence, 1999). The basis of this comparison is data on soil borings from the project site and a brief description of soil and rock materials underlying the Burney Water District's WWTP. TMPP has also evaluated flooding potential based on a description of the hydrostratigraphy, including clay layer(s) within the aquifer system, in response to CURE data request #45(h) and (i).

DATA REQUEST

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112. Please provide the reports by Hill-Harned (1972) and Geotechnical Consultants, Inc. (1985), which were referenced in the AFC (Lawrence, p5, 1999). Also, provide any the state well numbers and permit number of well logs and other data or documents used to develop conclusions regarding the hydrostratigraphy and clay layers of Burney basin, as stated in response to CURE data request #45(h) and (i). In particular, substantiate the applicant's conclusion that substrata between discharge ponds and Burney Creek area to the west of the project site will not transmit discharge and contribute to winter flooding.

BACKGROUND

The water consumption of the proposed project must be evaluated relative to the recharge of Burney basin to evaluate the magnitude of potential project impacts. Furthermore, groundwater levels in the Burney area respond quickly to precipitation because a relatively small volume of water can be stored, given the nature of the fractured rock aquifer. Impacts of the proposed project on the regional water supply will be most significant during drought years. During a drought, the proportion of groundwater consumed by the project would be much higher than the total amount of groundwater recharge as compared to this proportion based on average year conditions.

The applicant has developed a current and future water budget for Burney basin, based on average precipitation. In addition, the applicant plans to submit a drought-year water budget analysis for the basin (applicant's response to PSA data requests).

DATA REQUEST

113. Please provide a description of how the evapotranspiration for native vegetation and other non-irrigated land use is accounted for in the water budget.
114. Please provide the basis for estimate of 1.7% population growth and 10% increase in agricultural water use that was projected for the year 2030 in the AFC (Lawrence, 1999).